Sea Surface Temperature Products and their Validation at the PODAAC

Jorge Vazquez JPL/Caltech,M/S 300/323, 4800 Oak Grove Dr. Pasadena, CA. United States, 91109,jv@pacific.jpl.nasa.gov

Edward Armstrong JPL/Caltech, 4800 Oak Grove Dr. Pasadena, CA. United States ed@seanet.jpl.nasa.gov

Rosanna Sumagaysay JPL/Caltech, 4800 Oak Grove Dr. Pasadena, CA. United States

The Physical Oceanography Distributed Active Archive Center (PO.DAAC) at the Jet Propulsion Laboratorie distributes several Sea Surface Temperature Products (SST) suitable for both climate and high resolution studies. Additionally these products are currently being validated by global cross-comparisons.

Products suitable for climate studies include the Reynolds Operational Optimally Interpolated 1 degree Weekly SST grids and the NOAA/NASA AVHRR Oceans Pathfinder SST data set which now exists from 1985 to 2001 with plans for contir production in an operational mode. Global comparisons between these two products indicate RMS differences on the order of 0.3 to 0.5 degrees Celsius with biases regionally dependent. The global average between 60S and 60N results in a nighttime bias of -0.25 degC (Pathfinder SST cooler) with a standard deviation of 0.42 (0.54 RMS) and a daytime bias of -0.03 degC and standard deviation of 0.42 (0.51 RMS).

Additional comparisons will be shown between the Pathfinder SST data and the NOAA/NESDIS operational product. Comparisons between the Pathfinder SST and SST from both the Along Track Scanning Radiometer (1 and 2) indicate significant improvements using the ATSR-2. RMS differences for 1999 are approximately 0.3 degrees Celsius. Preliminary comparisons between the Pathfinder SST and SSTs as derived from the MODIS instrument, indicate biases on the order of 0.2 degrees Celsius.

In addition to the Reynolds Operational Products, the PODAAC also distributes a Level 2 and level 3 NAVOCEANO Multi-channel SST (MCSST) product. The advantage of this product is in the higher resolution (18km for level 3) grid. Additionally the Level 2 data is available at a near real time rate with a lag of a few hours. The level 2 data is gridded and interpolated at JPL to create the level 3 product available as binary files. Future plans include the conversion of this product into the HDF format and implementation of on-demand regional subsetting. Such subsetting, along with browse capability, are currently available for the NOAA/NASA AVHRR Oceans Pathfinder SST product.
product.

All the products may be ordered through the:

http://podaac.jpl.nasa.gov as well as downloaded via ftp.